## REMARKS/ARGUMENTS

Prior to the Office Action, claims 1-30 were pending. Within the Office Action, claims 1-30 are rejected. Accordingly claims 1-30 are currently pending in this application.

**Rejections under 35 U.S.C. 102(e)**

Within the Office Action, the claims 1, 8, 10-16, 20, 23, 25, and 27-30 are rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,951,765 to Gopinath et al. (hereinafter "Gopinath"). For the reasons fully outlined below, the Applicants respectfully traverse the rejections made within the Office Action and submit that the claims as presented above are in condition for allowance over Gopinath.

**A. 102(e) Rejection of Claim 30**

The cited portions of Gopinath describe a system for the introduction of solid precursors to a reactor for processing a semiconductor wafer with a supercritical fluid. [See Abstract.] The system includes an apparatus for generating supercritical solutions of solid precursors (100), [hereinafter "generator"], and an apparatus (102) for delivering the supercritical solutions of dissolved solid precursors to a supercritical reactor or a reactor recirculation loop. Two pumps are utilized in Gopinath.

First, Gopinath describes pump 139, as a pump within the circulation loop for "circulating [the supercritical fluid] though line 135 and reactor 137" (Column 8, line 40-42). However, this pump is not part of the inlet port 131 and is not "for introducing the fluid into the circulation loop" including "compressing the fluid to form a pressurized fluid", (emphasis added), as recited in Claim 30 of the present invention. The pump of the present invention is *part* of the inlet line and pressurizes all the supercritical fluid to a certain pressure before it reaches the appropriate pressure threshold and goes through the back-pressure regulator to enter the circulation loop. The pump 139 in Gopinath is utilized to circulate supercritical fluid through line 135 and reactor 137, and does so irrespective of any threshold pressure. Thus, pump 139 of

Gopinath does not teach a pump "for compressing the fluid to form a pressurized fluid" which is included in the "inlet line for introducing the fluid to the circulation loop", as recited in Claim 30 of the present invention. To anticipate a claim a reference must teach *every* claim element. See MPEP §2131. By failing to show that pump 139 is utilized for this purpose, the cited portion of Gopinath fails to anticipate.

The second pump, pump 119 pushes fluid through the generator to dissolve and saturate supercritical fluid with solid precursors. The saturated fluid then goes through a valve at 121 and through a check valve before entering the syringe pumps 127. Once the fluid goes through the check valve and the syringe pump 127, it passes through the inlet line 131 and into the circulation loop. There is no pump in the inlet line for pressurizing the fluid before it enters the circulation loop. In fact, fluid entering the circulation loop through the inlet line 131 ("precursor-free supercritical fluid", as described in Column 7, line 44-47) may be delivered directly to the inlet line from the supercritical fluid inlet 117 via line 133 and the syringe pump at 127 without actually be compressed by the pump at 119. Since it is possible that the fluid from inlet 117 can have adequate pressure to be introduced to the circulation loop through the inlet line 131, without first being pressurized by the pump 119, the pump 119 is not "a pump for compressing the fluid to form a pressurized fluid" for "introducing the fluid into the circulation loop".

Thus, pump 119 of Gopinath does not teach a pump "for compressing the fluid to form a pressurized fluid" which is included in the "inlet line for introducing the fluid to the circulation loop", as recited in Claim 30 of the present invention. To anticipate a claim a reference must teach *every* claim element. See MPEP §2131. By failing to show that the fluid entering the circulation loop 135 must be brought to the appropriate threshold by pump 119, the cited portion of Gopinath fails to anticipate.

**B. 102(e) Rejection of Claims 1 & 16**

The cited portions of Gopinath describe a system for the introduction of solid precursors to a reactor for processing a semiconductor wafer with a supercritical fluid. [See Abstract.] The system includes apparatus 102, used to deliver supercritical solutions to a system. However, Gopinath does not teach a "flow-control means"as recited in amended claims 1 and 16 of the present invention. In the present invention, a valve, a pneumatic actuator, an electric actuator, a hydraulic actuator, or a micro-electric actuator work to act as a "means for starting and means for stopping the means for injecting, wherein the means for starting and the means for stopping comprises a flow-control means". Gopinath uses syringe pumps to deliver supercritical fluid to a system, but never mentions using a valve, a pneumatic actuator, an electric actuator, a hydraulic actuator, or a micro-electric actuator as a flow-control means. Therefore, the syringe pumps of Gopinath does not teach a "flow-control means" as recited in the currently amended Claims 1 and 16 of the present invention. To anticipate a claim, a reference must teach *every* claim element. See MPEP §2131. By failing to show a "means for starting and the means for stopping comprises a flow-control means, wherein the flow-control means comprises at least one of a valve, a pneumatic actuator, an electric actuator, a hydraulic actuator, and a micro-electric actuator " the cited portion of Gopinath fails to anticipate.

**C. 102(e) Rejection of Claims 8, 10-15, 19, 20, 23, 25, and 27-29**

Claims 8, and 10-15 depend from Claim 1. As described above, Claim 1 is allowable over the teachings of Gopinath. Accordingly, Claims 8, and 10-15 are allowable as being dependent on an allowable base claim.

Claims 19, 20, 23, 25, and 27-29 depend from Claim 16. As described above, Claim 16 is allowable over the teachings of Gopinath. Accordingly, Claims 19, 20, 23, 25, and 27-29 are allowable as being dependent on an allowable base claim.

**Rejections under 35 U.S.C. 103(a)**

**A. DeYoung et al.**

Within the Office Action, the claims 2-5, 17 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Gopinath in view of U.S. Patent No. 6,782,900 to DeYoung et al. (hereinafter "DeYoung"). For the reasons fully outlined below, the Applicants respectfully traverse the rejections made within the Office Action and submit that the claims as presented above are in condition for allowance over Gopinath in view of DeYoung.

DeYoung discloses a supercritical processing device which employs a predetermined pressure range. As explained above, Gopinath describes an apparatus and methods for introduction of solid precursors and reactants into a supercritical fluid reactor. However, Gopinath does not teach a "means for starting and the means for stopping comprises a flow-control means, wherein the flow-control means comprises at least one of a valve, a pneumatic actuator, an electric actuator, a hydraulic actuator, and a micro-electric actuator ", as recited in amended Claims 1 and 16 of the present invention.

Claims 2-5 depend from Claim 1, and Claims 17 and 18 depend from Claim 16. It could not be obvious for one skilled in the art to practice the present invention simply employing a predetermined pressure range to Gopinath's teachings since Gopinath does not teach all the claimed elements of the invention. Accordingly, Claims 2-5, 17 and 18 are allowable as being dependent on an allowable base claim.

**B. Fan et al.**

Within the Office Action, the claims 6, 7, 21, 22, 24, and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Gopinath in view of U.S. Patent No. 5,620,524 to Fan et al. (hereinafter "Fan"). For the reasons fully outlined below, the Applicants respectfully traverse the rejections made within the Office Action and submit that the claims as presented above are in condition for allowance over Gopinath in view of Fan.

Fan discloses a flow-control means in full automatic mode for removing active human

involvement and for precision. As explained above, Gopinath describes an apparatus and methods for introduction of solid precursors and reactants into a supercritical fluid reactor. However, Gopinath does not teach a means for starting and the means for stopping comprises a flow-control means, wherein the flow-control means comprises at least one of a valve, a pneumatic actuator, an electric actuator, a hydraulic actuator, and a micro-electric actuator", as recited in Claims 1 and 16 of the present invention.

Claims 2-5 depend from Claim 1, and Claims 17 and 18 depend from Claim 16. It could not be obvious for one skilled in the art to practice the present invention simply employing a predetermined pressure range to Gopinath's teachings since Gopinath does not teach all the claimed elements of the invention. Accordingly, Claims 2-5, 17 and 18 are allowable as being dependent on an allowable base claim.

## CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. If the Examiner believes that a telephone conference would expedite prosecution of this application, the Examiner is encouraged to contact the undersigned at (408) 530-9700.

Respectfully submitted,
HAVERSTOCK & OWENS LLP

Dated: 10-4-06

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CERTIFICATE OF MAILING (37 CFR§ 1.8(a))
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HAVERSTOCK & OWENS LLP

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